

THE MOLLUSCA OF THE PAREORA AND OAMARU
SYSTEMS OF NEW ZEALAND.

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The correlation of the Tertiary rocks of Australia with those of New Zealand is one of considerable interest, but one on which, as yet, no well grounded opinion has been given. As a contribution towards arriving at correct ideas on the subject, I offer to the Society a list of the Mollusca of the Pareora and Oamaru Systems in New Zealand, which are probably of Miocene and Oligocene age. The list is by no means complete as no catalogue of the large collections brought to the Wellington Museum since 1873 has been published; but it is fuller than any previous list, as it includes, for the first time, the Tertiary Mollusca in the Canterbury Museum collected by Dr. von Haast, between 1862 and 1875, during his geological survey of Canterbury, and those collected by myself in 1874-5 when I was surveying Otago. The nomenclature also has been carefully revised.

The list contains 268 species, of which 184 are confined to the Pareora System, 33 to the Oamaru System, and 51 are common to both. But of this latter number a few are doubtful. Evidently the two systems are closely related palæontologically, but they are separated stratigraphically by an unconformity which is almost always present. The Geological Survey divides the Pareora System into upper and lower miocene, the blue clay of Wanganui being included in the upper division. But I have elsewhere shewn that this blue clay belongs to the Wanganui System (1), and, this being

(1) Trans. N.Z. Institute, Vol. 18. The Wanganui System.

removed, I cannot detect any palæontological break in the system. No doubt there is a considerable difference between the fossils of the upper and the lower beds, but deposition appears to have been continuous during the whole time and I cannot make out any distinct line of separation.

Also no stratigraphical break has, as yet been proved between any parts of the Pareora System.

Dr. Hector certainly remarks in his Progress Report for 1877-8 (p. IV.), that Mr. McKay had found the "Wairarapa Limestone and underlying Taueru clays to rest unconformably on the Taipo beds," and Mr. McKay himself says, "I consider that there is sufficient evidence to prove unconformity between these beds and the Taipos, which I shall adduce when describing those rocks," (l.c., p. 20). But he never does adduce this evidence.

The stratigraphical position of the fossils from Kakahu is uncertain. The beds containing them appear to dip under limestones belonging to the Oamaru System, but the section does not prove this absolutely and it is quite possible that the fossiliferous beds may have been thrown down by a fault. The fossils themselves are mostly Pareora forms, but a few are not known elsewhere. Under these circumstances I have admitted them into the list as belonging to the Oamaru System but with a note of interrogation.

CEPHALOPODA.

ATURIA ZICZAC, Sowb. var *AUSTRALIS* McCoy, Prod. Palæ. Victoria, Decade III., pl. 24.

Pareora System.—Waihao-forks; Hampden.

Oamaru System.—Kakanui; Weka-pass Stone; Waihemo.

GASTROPODA.

CYLICHA STRIATA, Hutton, Cat. Marine Moll. of N.Z., p. 52.

Pareora System.—Awamoia; Pareora.

Found also in the Wanganui System.

CYLICHNA ENYSI, Hutton, Cat. Tertiary Moll. of N.Z., p. 16.

Oamaru System.—Trelissick Basin.

TORNATELLA OVALIS, Hutton, Trans. N.Z. Institute, XVII.,
p. 325.

Pareora System.—White-rock River.

VOLVULA REFLEXA, Hutton, Trans. N.Z. Inst., XVIII.

Pareora System.—White-rock River.

TYPHIS HEBETATUS, Hutton, Trans. N.Z. Inst. IX., p. 594, pl. 16,
f. 1.

Pareora System.—Mt. Harris ; Mt. Horrible ; Awamoa.

MUREX NEOZELANICUS, Quoy and Gaimard, Voy. Astrolabe, Zool.
iii., p. 529, pl. 36, f. 5-7.

Pareora System.—Mt. Harris.

Found also in the Wanganui System.

PURPURA TEXTILIOSA, Lamarck, Anim. sans Vert. 2nd ed., Vol. X.,
p. 77, No. 24.

Pareora System.—Cape Rodney ; Trelissick Basin ; Greta, N.
Canterbury.

PURPURA CONOIDEA, Zittel, Reise der Novara, Geol. ii., p. 37,
pl. 15, f. 5.

Pareora System.—Awatere.

I have not seen this species unless it is *Siphonalia nodosa* var.
conoidea, in which case Zittel's figure is not good.

FUSUS AUSTRALIS, Quoy and Gaimard, Voy. Astrolabe, Zool. ii.,
p. 495, pl. 34, f. 9-14.

Pareora System.—Greta, N. Canterbury ; Hampden.

Found also in the Wanganui System.

FUSUS SPIRALIS, Adams, Pro. Zool. Soc. of London, 1855, p. 221.

Pareora System.—Awatere ; Greta ; Awamoa.

Found also in the Wanganui System.

FUSUS DENTATUS, Hutton, Trans. N.Z. Institute, IX., p. 594.

Pareora System.—Mt. Harris ; White-rock River.

Perhaps a variety of the last with longitudinal ribs.

FUSUS TEGENS, Hutton, Trans. N.Z. Institute, IX., p. 594.

Pareora System.—White-rock River.

PERISTERIA BREVIROSTRIS, Hutton, Trans. N.Z. Inst., IX.,
p. 596, pl. 16, f. 10 (Turbinella).

Pareora System.—Pareora ; White-rock River.

PERISTERIA CINCTA, Hutton, Trans. N.Z. Inst., XVII., p. 327
(Clathurella) ; *C. rudis*, Hutton, l. c., p. 328.

Pareora System.—White-Rock River ; Otaio ; Waihao-forks.

SIPHONALIA MANDARINA, Duclos, Mag. Zool., Vol. VIII. ;
Fusus Zealandicus, Q. and G.

Pareora System.—Greta ; Waikari ; Trelissick ; White-rock
River ; Awamoa.

Found also in the Wanganui System.

Var. CAUDATA, Quoy and Gaimard, l. c., Zool. ii., p. 503,
pl. 34, f. 20-21.

Pareora System.—Callaghan's Creek, Westland.

SIPHONALIA DILATATA, Quoy and Gaimard, l. c., Zool. ii., p. 498,
pl. 34, f. 15-16. *Fusus subreflexus*, Sowb. in Darwin's
Geol. Obs. in S. America, p. 259, pl. 4, f. 57.

Pareora System.—Upoko-Ngaruru, E. Coast of Wellington ;
Awatere ; Greta ; Pareora.

Oamaru System (?)—Kakahu.

Found also in the Wanganui System.

Var. CRAWFORDI, Hutton, Cat. Tertiary Moll. of N.Z., p. 3.

Pareora System.—Teawaite, E. Coast of Wellington.

SIPHONALIA PLICATILIS, Hutton, Cat. Tertiary Moll. of N.Z., p. 3.

Pareora System.—Tapanui, Otago.

SIPHONALIA ORBITA, Hutton, Trans. N.Z. Institute, XVII., p. 326.

Pareora System.—Greta, N. Canterbury.

Perhaps the same as the last species.

SIPHONALIA NODOSA, Martyn, Univ. Conch. Buccinum, pl. 5.

Pareora System.—Waihao-forks ; Callaghan's Creek, West-
land (?) ; Hampden.

Found also in the Wanganui System.

Var. CONOIDEA, Hutton, *F. nodosus*, var. D, Cat. Tertiary Moll. of N.Z.

Pareora System.—Awatere ; Waikari ; Kanieri ; New River, Greytown ; Hampden.

Found also in the Wanganui System.

SIPHONALIA SUBNODOSA, Hutton, Trans. N.Z. Inst., IX., p. 596, pl. 16, f. 7. (*Cominella*) ; *F. nodosus*, var. C, Cat. Tertiary Mollusca of N.Z.

Pareora System.—Waikari ; White-rock River ; Awamoa ; Hampden.

Found also in the Wanganui System.

SIPHONALIA COSTATA, Hutton, Trans. N.Z. Institute, IX., p. 594, pl. 16, f. 2.

Pareora System.—Mt. Harris ; White-rock River ; Pareora ; Mt. Horrible ; Matakahi, Bay of Islands.

SIPHONALIA REGULARIS, Sowerby, in Darwin's Geol. Obs. in S. America, p. 258, pl. 4, f. 55.

Pareora System.—Awamoa.

PISANIA LINEATA, Martyn, Univ. Conch. Buccinum, pl. 48.

Pareora System.—Greta, N. Canterbury ; Pareora.

Found also in the Wanganui System.

PISANIA MEDIA, Hutton, Trans. N.Z. Institute, XVII., p. 326.

Pareora System.—Waikari ; Pareora ; White-rock River.

COMINELLA MACULATA, Martyn, Univ. Conch. Buccinum, pl. 49.

Pareora System.—Trelissick Basin ; White-rock River.

Found also in the Wanganui System.

COMINELLA INFLATA, Hutton, Cat. Tertiary Moll. of N. Z., p. 6 (Buccinum).

Pareora System.—Kanieri ; Mt. Horrible, Timaru.

COMINELLA CARINATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 6 (Buccinum).

Pareora System.—Trelissick Basin.

COMINELLA ROBINSONI, Zittel, Reise der Novara, Geol. ii., p. 36,
pl. 13, f. 4.

Pareora System.—Port Hills, Nelson.

I have not recognised this species. Perhaps it is a Siphonalia.

COMINELLA ORDINATIS, Hutton, Trans. N.Z. Institute, IX.,
p. 596, pl. 16, f. 8.

Pareora System.—White-rock River.

NASSA SOCIALIS, Hutton, Trans. N.Z. Inst., XVIII., *N. compta*
Hutton, l.c., IX., p. 596, pl. 16, f. 9, [not of Adams.]

Pareora System.—White-rock River ; Awamoa ; Pareora ;
Hampden.

NASSA INCISA, Hutton, Trans. N. Z. Inst., XVII., p. 328 (*Clathu-*
rella) ; *C. cingulata*, Hutton, l.c., p. 327.

Pareora System.—Te Aute, Hawke's Bay ; Greta, N. Canter-
bury.

OLIVA NEOZELANICA, Hutton, Trans. N.Z. Institute, XVII.,
p. 314, pl. 18, f. 1.

Pareora System.—Greta, N. Canterbury ; Trelissick Basin.

Found also in the Wanganui System.

ANCILLARIA AUSTRALIS, Sowb. Sp. Conch., 1830, pl. 7, f. 44-46.

Pareora System.—Waikari ; Motunau ; Mt. Horrible ;
Waihao-forks ; Awamoa ; Trelissick ; Hampden.

Found also in the Wanganui System.

ANCILLARIA LATA, Hutton, Trans. N.Z. Institute, XVII., p. 325.

Pareora System.—White-rock River ; Tengawai ; Mt.
Horrible.

Found also in the Wanganui System.

ANCILLARIA HEBERA, Hutton, Cat. Tertiary Moll. of N.Z., p. 6.

Pareora System.—Greta ; Pareora ; White-rock River ; Mt.
Horrible ; Otaio ; Waihao-forks ; Awamoa ; Matakahi,
Bay of Islands.

Oamaru System.—Trelissick Basin.

MARGINELLA AUSTRALIS, Hinds (?), Pro. Zool. Soc. of London,
1844, p. 75.

Pareora System.—Awamoa ; Mt. Royal, Otago.

MARGINELLA DUBIA, Hutton, Cat. Tertiary Moll. of N.Z., p. 8.

Oamaru System.—Trelissick Basin.

MARGINELLA VENTRICOSA, Hutton, Cat. Tertiary Moll. of N.Z., p. 8.

Oamaru System.—Trelissick Basin.

VOLVARIA FICOIDES, Hutton, Cat. Tertiary Moll. of N.Z., p. 8.

Pareora System (?)—Oamaru.

VOLUTA PACIFICA, Solander, Cat. Portland Museum, No. 4039.

Pareora System.—Awatere ; Waikari ; Lower Gorge of the
Waipara ; Mt. Harris ; Pareora ; Trelissick ; Hampden.

Found also in the Wanganui System.

Var. ELONGATA, Swainson, Exot. Conch., pl. 20-21.

Pareora System.—Waikari.

Oamaru System.—Waipara ; Trelissick ; Maerawhenua ;
Oamaru ; Waihemo ; Caversham.

Found also in the Wanganui System.

VOLUTA GRACILIS, Swainson, Exot. Conch., pl. 42-43.

Pareora System.—Awatere ; Waikari ; Mt. Harris ; Kanieri ;
Trelissick.

Found also in the Wanganui System.

VOLUTA ATTENUATA, Hutton, Quar. Jour. Geol. Soc. of London,
Vol. 41, p. 555.

Pareora System.—Pareora.

Oamaru System.—Weka-pass ; Trelissick Basin.

VOLUTA KIRKII, Hutton, Trans. N.Z. Institute, XVII., p. 325.

Pareora System.—Trelissick Basin.

Oamaru System (?)—Kakahu.

VOLUTA GRACILICOSTATA, Zittel, Reise der Novara, Geol. ii., p. 38,
pl. 13, f. 6.

Pareora System.—Port Hills, Nelson.

I have not seen this species.

VOLUTA CORRUGATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 7.

Pareora System.—Maunga-pakeha Taipo, E. Coast of Wellington; Awatere; Waikari; Mt. Horrible; Pareora; Waihao-forks; Mt. Harris; Kanieri; Hampden; Lake Wakatipu.

VOLUTA ACULEATA, Hutton, Trans. N.Z. Institute, XVII., p. 325.

Pareora System.—White-rock River.

MITRA APICALIS, Hutton, Cat. Tertiary Moll. of N.Z., p. 7.

Pareora System.—Pareora; Awamoa.

MITRA ENYSI, Hutton, Cat. Tertiary Moll. of N.Z., p. 7.

Pareora System.—Pareora.

Oamaru System.—Trelissick Basin.

MITRA INCONSPICUA, Hutton, Trans. N.Z. Inst. XVII., p. 326.

Pareora System.—Mt. Harris; Waihao-forks.

CONUS TRAILLI, Hutton, Cat. Tertiary Moll. of N.Z., p. 10.

Pareora System.—Trelissick; Point Hill, Waitaki; Awamoa.

CONUS ORNATUS, Hutton, Cat. Tertiary Moll. of N.Z., p. 10.

Pareora System.—Pareora; Point Hill, Waikati; Awamoa.

TEREBRA NITIDA, Hinds (?), Pro. Zool. Soc. of London, 1843, p. 152.

Pareora System.—Pareora; White-rock River.

TEREBRA COSTATA, Hutton, Trans. N.Z. Institute, XVII., p. 315,
pl. 18, f. 6.

Pareora System.—Awamoa Otaio.

Found also in the Wanganui System.

TEREBRA BIPLEX, Hutton, Trans. N.Z. Inst. XVII., p. 327.

Pareora System.—Pareora.

PLEUROTOMA PAGODA, Hutton, Cat. Tertiary Moll. of N.Z., p. 5.

Pareora System.—Otaio; Mt. Harris; Awamoa.

Found also in the Wanganui System.

PLEUROTOMA ALBULA, Hutton, Cat. Marine Moll. of N.Z., p. 12.

Pareora System.—White-rock River; Awamoa.

Found also in the Wanganui System.

PLEUROTOMA EXCAVATA, Hutton, Trans. N.Z. Institute, IX.,
p. 595, pl. 16, f. 6.

Pareora System.—White-rock River.

Perhaps a variety of the last.

PLEUROTOMA FUSIFORMIS, Hutton, Trans. N.Z. Institute, IX.,
p. 595, pl. 16, f. 3.

Pareora System.—Waikari ; Mt. Horrible ; Pareora ; Otaio ;
Mt. Harris ; Waihao-forks ; Awamoa ; Hampden.

PLEUROTOMA BUCHANANI, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 4.

Pareora System.—White-rock River ; Waihao-forks ; Awamoa ;
Hampden.

Found also in the Wanganui System.

PLEUROTOMA AWAMOENSIS, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 4.

Pareora System —Putiki Point, Kaipara ; White-rock River ;
Mt. Harris ; Waihao-forks ; Awamoa.

PLEUROTOMA SULCATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 4.

Pareora System.—Cape Rodney ; Waikari ; Treliwick ; Mt.
Harris.

PLEUROTOMA ROBUSTA, Hutton, Trans. N.Z. Inst., IX., p. 595,
pl. 16, f. 4.

Pareora System.—Matakuhi, Bay of Islands ; Mt. Horrible ;
White-rock River.

PLEUROTOMA HAASTI, Hutton, Trans. N.Z. Inst., IX., p. 595,
pl. 16, f. 5.

Pareora System.—Mt. Horrible ; Pareora ; White-rock River ;
Mt. Harris.

PLEUROTOMA HEBES, Hutton, Cat. Tertiary Moll. of N.Z., p. 4.

Oamaru System.—Cape Oamaru ; Poverty Bay.

PLEUROTOMA LATESCENS, Hutton, Cat. Tertiary Moll. of N.Z., p. 4.

Oamaru System.—Mt. Brown, Waipara.

DRILLIA WANGANUIENSIS, Hutton, Cat. Tertiary Moll. of N.Z., p. 4.

Pareora System.—Greta, N. Canterbury ; White-rock River.

Found also in the Wanganui System.

DAPHNELLA STRIATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 5.

(Bela).

Pareora System.—Awamoa.

Found also in the Wanganui System.

CLATHURELLA HAMILTONI, Hutton, Trans. N.Z. Inst., XVII.,

p. 316, pl. 18, f. 7.

Pareora System.—Trelissick Basin ; Waihao-forks.

Found also in the Wanganui System.

CLATHURELLA LEPTOSOMA, Hutton, Trans. N.Z. Inst., XVII., p. 328.

Pareora System.—White-rock River.

TRITON SPENGLERI, Lamarck, Anim. sans Vert., 2nded., IX., p. 627.

Pareora System.—Awamoa ; Hampden.

Found also in the Wanganui System.

TRITON MINIMUS, Hutton, Cat. Tertiary Moll. of N.Z., p. 5 (1873).

Pareora System.—Trelissick ; White-rock River ; Awamoa.

Oamaru System.—Trelissick.

CASSIDARIA SULCATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 8.

Pareora System.—Waikari ; Pareora ; Kanieri.

CASSIDARIA SENEX, Hutton, Cat. Tertiary Moll. of N.Z., p. 11,

(Struthiolaria).

Pareora System.—Pareora ; Oamaru (?).

Oamaru System.—Weka-pass ; Oamaru ; Caversham.

Much like *Cassis Coronadoi* (Crosse), from Cuba.

NATICA NEOZELANICA, Quoy and Gaimard, l.c., Zool. ii., p. 237,

pl. 66, f. 11-12.

Pareora System.—Mt. Caverhill ; Greta ; Pareora ; White-rock River ; Hampden ; Wangaloa.

Found also in the Wanganui System.

NATICA DARWINII, Hutton, Trans. N.Z. Inst., XVIII.,

N. solida, Sowb. [not of Blainville.]

Pareora System.—Awatere ; Trelissick ; Fox's Gully, Arahura.

NATICA GIBBOSA, Hutton, Trans. N.Z. Inst., XVIII.

Pareora System.—Conway River; Hurinui Mound; Lower Gorge of Waipara; Trelissick; Mt. Horrible; Pareora; White-rock River; Waihao-forks.

Oamaru System.—Curiosity Shop (?); Kakahu (?).

Found also in the Wanganui System.

NATICA CALLOSA, Hutton, Cat. Tertiary Moll. of N.Z., p. 9.

Pareora System.—East Coast of Wellington.

NATICA OVATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 9.

Pareora System.—Lyndon; Waikari; Motunau; Trelissick; Mt. Horrible; Pareora; White-rock River; Kanieri; Callaghan's Creek, Westland; Awamoa; Pourakino, Southland.

Oamaru System.—Trelissick Basin; Oamaru (?)

Found also in the Wanganui System.

NATICA HAMILTONI, Tate (?), Trans. Phil. Soc. of Adelaide.

Pareora System.—Trelissick; Mt. Horrible; Pareora; White-rock River.

Oamaru System.—Trelissick.

NATICA SUTURALIS, Hutton, Trans. N.Z. Inst., IX, p. 597, pl. 16, f. 11.

Pareora System.—Matakuhi, Bay of Islands; Awatere; Waikari; Mt. Horrible; Waihao-forks; Awamoa; Hampden; Mt. Royal, Otago.

SIGARETUS SUBGLOBOSUS, Sowb. in Darwin's Geol. Obs. in S. America, p. 254, pl. 3, f. 36-37.

Pareora System.—Pareora; White-rock River; Awamoa.

SIGARETUS CARINATUS, Hutton, Trans. N.Z. Institute, IX., p. 597.

Pareora System.—White-rock River.

EULIMA ACICULATA (?), Pease, Pro. Zool. Soc. of London, 1860.

Pareora System.—White-rock River.

ODOSTOMIA RUGATA, Hutton; *O. plicata*, Hutton, Trans. N.Z. Inst., XVII., p. 319, [not of Montfort.]

Pareora System.—White-rock River.

Found also in the Wanganui System.

CERITHIUM CANCELLATUM, Hutton, Cat. Tertiary Moll. of N.Z., p. 12.

Pareora System.—Hampden.

Found also in the Wanganui System.

CERITHIUM NODOSUM, Hutton; *C. nodulosum*, Hutton, Cat. Tertiary Moll. of N.Z. [not of Brug.]

Pareora System.—Trelissick; Mt. Horrible; Pareora; White-rock River; Waimea, Westland.

CERITHIUM RUGATUM, Hutton, Cat. Tertiary Moll. of N.Z., p. 11.

Pareora System.—Waikari; Tapanui, Otago.

MELANOPSIS POMAHAKA, Hutton, Cat. Tertiary Moll. of N.Z., p. 6 (Ancillaria).

Pareora System.—Tapanui, Otago.

STRUTHIOLARIA FRAZERI, Hutton, Trans. N.Z. Institute, XVII., p. 329.

Pareora System.—Motunau.

Found also in the Wanganui System.

STRUTHIOLARIA CINCTA, Hutton, Cat. Tertiary Moll. of N.Z., p. 11.

Pareora System.—Upper Mohaka, Hawke's Bay; Awatere; Motunau, Greta; Waikari; Lower Gorge of Waipara; Opihi; Pareora; Kanieri; Callaghan's Creek, Westland.

Oamaru System (?)—Kakahu.

STRUTHIOLARIA CALCAR, Hutton, Trans. N.Z. Institute, XVIII.

Pareora System.—Tengawai; Awamoa.

STRUTHIOLARIA TUBERCULATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 11.

Pareora System.—Upper Mohaka, Hawke's Bay; Waikari; Lower Gorge of Waipara; Mt. Horrible; Pareora; White-rock River.

STRUTHIOLARIA SPINOSA, Hutton, Trans. N.Z. Institute, XVIII.

Pareora System.—Kawau ; East-Coast of Wellington ; Trelissick ; Pareora ; Upukororo Creek, Lake Te Anau ; Purakino, Southland.

STRUTHIOLARIA VERMIS, Martyn, Univ. Conch., pl. 53.

Pareora System.—Awatere ; Motunau ; Awamoā.
Found also in the Wanganui System.

STRUTHIOLARIA CINGULATA, Zittel, Reise der Novara, Geol. ii.,
p. 35, pl. 15, f. 2.

Pareora System.—Awatere ; Motunau ; Mt. Harris.
Found also in the Wanganui System.

STRUTHIOLARIA OBESA, Hutton, Trans. N. Z. Institute, XVII.,
p. 329.

Pareora System.—Trelissick ; Shepherd's Hutt, Waipara.

STRUTHIOLARIA SULCATA, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 10 ; *S. canaliculata*, Zittel, Reise der Novara, Geol. ii.,
p. 34, pl. 15, f. 1 [not of Spengl].

Pareora System.—Upper Mohaka, Hawke's Bay ; East Coast
of Wellington ; Awatere.

TROCHITA NEOZELANICA, Lesson, Voy. Coquille, Zool. ii., p. 395.

Pareora System.—Napier ; Greta ; Motunau ; Trelissick ;
Pareora ; Awamoā ; Hampden.

Oamaru System.—Trelissick.

Found also in the Wanganui System.

TROCHITA DILATATA, Sowb. (?) ; Zittel, Reise der Novara, Geol. ii.,
p. 43, pl. 15, f. 8.

Pareora System.—Awatere ; Lyndon ; Mt. Cookson ; Waikari ;
Lower Gorge of Waipara ; Point Hill, Waitaki.

TROCHITA ALTA, Hutton, Trans. N.Z. Institute, XVII., p. 329.

Pareora System.—White-rock River.

Found also in the Wanganui System.

CREPIDULA COSTATA, Sowb. Genera of Shells, f. 3.

Pareora System.—Trelissick.

Found also in the Wanganui System.

CREPIDULA STRIATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 14 ;
Zittel, l. c., pl. 15, f. 10.

Pareora System.—Awatere ; Trelissick ; Oamaru.

CREPIDULA MONOXYLA, Lesson, Voy. Coquille, Zool. ii., p. 391.

Pareora System.—Napier ; Paparoa, Upper Wanganui ;
Awatere ; Motunau ; Trelissick ; White-rock River ;
Awamoa ; Hampden.

Found also in the Wanganui System.

CREPIDULA INCURVA, Zittel, Reise der Novara, Geol. ii., p. 44,
pl. 15, f. 9.

Pareora System.—Napier ; Awatere ; Motunau ; Lyndon ;
Waikari ; Lower Gorge of Waipara ; Trelissick ; Pareora ;
Awamoa.

CREPIDULA UNGUIFORMIS, Lamarck, Anim. sans Vert., 2nd ed.
VIII., p. 642.

Pareora System.—Awamoa.

Found also in the Wanganui System.

HIPPONYX RADIATUS, Hutton, Cat. Tertiary Moll. of N.Z., p. 14,
(Pileopsis.)

Pareora System.—Awatere.

TURRITELLA GIGANTEA, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 12.

Pareora System.—Lower Gorge of Waipara ; Trelissick ;
Pareora ; Pourakino, Southland.

Oamaru System.—Caversham.

TURRITELLA CONCAVA, Hutton, Trans. N.Z. Institute, IX., p. 597.

Pareora System.—Matakuhi, Bay of Islands ; White-rock
River ; Mt. Horrible ; Pareora ; Point Hill, Waitaki.

TURRITELLA PATAGONICA, Sowb. in Darwin's Geol. Obs. in S. America, p. 256, pl. 3, f. 48; *T. tricincta* var. β , Cat. Tertiary Moll. of N.Z.

Pareora System.—Mt. Cookson; White-rock River; Mt. Harris; Kanieri.

TURRITELLA ALDINGÆ, Tate, Trans. Phil. Soc. of Adelaide.

Pareora System.—Pareora; White-rock River; Mt. Harris; Awamoa; Westland.

TURRITELLA ROSEA, Quoy and Gaimard, Voy. Astrolabe, Zool. iii., p. 136, pl. 55, f. 24-26.

Pareora System.—Cape Rodney; Kawau; Awatere; Mt. Cookson; Lyndon; Motunau; Greta; Mt. Caverhill; Trelissick; Tengawai; Mt. Harris; Hampden.

Found also in the Wanganui System.

TURRITELLA AMBULACRUM, Sowerby, in Darwin's Geol. Obs. in S. America, p. 257, pl. 3, f. 49; *T. bicincta*, Hutton, Cat. Tertiary Moll. of N.Z.

Pareora System.—Awatere; Kanieri; Hampden.

Oamaru System (?).—Kakahu.

Found also in the Wanganui System.

TURRITELLA TRICINCTA, Hutton, Cat. Tertiary Moll. of N.Z., p. 13; *T. rosea*, Mantell, Quar. Jour. Geol. Soc., Vol. VI., pl. 28, f. 16 [not of Quoy].

Pareora System.—Awatere; Mt. Cookson; Waikari; Trelissick; Awamoa; Hampden.

Found also in the Wanganui System.

TURRITELLA ORNATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 13.

Pareora System.—Hampden; Tapanui, Otago.

EGLISIA STRIOLATA, Hutton, Trans. N.Z. Institute, XVII., p. 329.

Pareora System.—White-rock River.

VERMETUS MONILIFERUS, Hutton, Cat. Tertiary Moll. of N.Z., p. 13.

Pareora System.—Trelissick.

Found also in the Wanganui System.

XENOPHORA CONCHYLIOPHORA, Born.

Pareora System.—Awamoa.

Found also in the Wanganui System.

SCALARIA MARGINATA, Hutton, Trans. N.Z. Institute, XVII.,
p. 330.

Oamaru System.—Curiosity Shop.

SCALARIA LYRATA, Zittel, Reise der Novara, Geol. ii., p. 41, f. 18.

Pareora System.—Kawau.

Oamaru System.—Port Waikato ; Aotea ; Kaipuki ; Weka-
pass ; Curiosity Shop ; Opihi ; Oamaru.

SCALARIA BROWNII, Zittel, Reise der Novara, Geol. ii., p. 42,
pl. 9, f. 2.

Pareora System.—White-rock River.

Oamaru System.—Aotea ; Brighton, Westland ; Opihi.

Probably a variety of the last species.

SCALARIA ROTUNDA, Hutton, Cat. Tertiary Moll. of N.Z., p. 10.

Oamaru System.—Weka-pass ; Brighton, Westland.

SCALARIA ZELEBORI, Frauenfeld, Reise der Novara, Moll.,
pl. 1, f. 6.

Pareora System.—White-rock River.

Found also in the Wanganui System.

NERITOPSIS sp., Zittel, Reise der Novara, Geol. ii., p. 43,
pl. 9, f. 4.

Oamaru System.—Papakura, Auckland.

TURBO SUPERBUS, Zittel, Reise der Novara, Geol. ii., p. 39,
pl. 14, f. 2.

Pareora System.—Cape Rodney ; Kawau ; Hurinui Mound ;
Trelissick ; Mt. Horrible.

ROTELLA NEOZELANICA, Homb. and Jacq. Voy. Pole Sud., Zool. V.,
p. 53, pl. 14, f. 5-6.

Pareora System.—Waikari ; Motunau.

Found also in the Wanganui System.

TROCHUS CIRCINATUS, Hutton, Cat. Tertiary Moll. of N.Z., p. 15.

Pareora System.—Awatere ; New River, Greymouth.

TROCHUS NODOSUS, Hutton, Trans. N.Z. Institute, XVII., p. 330.

Oamaru System.—Trelissick Basin.

ZIZYPHINUS PUNCTULATUS, Martyn, Univ. Conch., pl. 37.

Pareora System.—Mt. Caverhill ; Weka Creek, Weka Pass.

Found also in the Wanganui System.

ZIZYPHINUS SPECTABILIS, Adams, Pro. Zool. Soc. London, 1854,

p. 37, pl. 27, f. 7.

Oamaru System.—Trelissick.

A living species not yet found higher.

CANTHARIDUS TENEBROSUS, Adams, Pro. Zool. Soc. London, 1851,

p. 170.

Pareora System.—Awatere ; Trelissick.

Oamaru System.—Pahau ; Trelissick.

Found also in the Wanganui System.

MONILEA STOLICZKAI, Zittel, Reise der Novara, Geol. ii., p. 40,

pl. 15, f. 7. (Trochus).

Pareora System.—Awatere ; White-rock River ; Awamoa.

CYCLOSTREMA (?) HELICOIDES, Hutton, Trans. N.Z. Institute, IX.,

p. 598.

Pareora System.—White-rock River.

PLEUROTOMARIA TERTIARA, McCoy, Prod. Palæ. Victoria, Decade 3,

pl. 25, f. 1.

Oamaru System.—Weka-pass ; Mt. Somers building stone ;

Oamaru.

HALIOTIS IRIS, Martyn, Univ. Conch., pl. 61.

Pareora System —Cape Rodney.

A living species not yet found in the Wanganui System.

EMARGINULA STRIATULA, Quoy and Gaimard, Voy. Astrolabe,

Zool. iii., p. 332, pl. 68, f. 21-22.

Pareora System.—Awamoa.

Found also in the Wanganui System.

SCAPHOPODA.

DENTALIUM GIGANTEUM, Sowb. in Darwin's Geol. Obs. in S. America, p. 263, pl. 2, f. 1; *D. solidum*, Hutton, Cat. Tertiary Moll. of N. Z., p. 2.

Pareora System.—Awatere (?); Sherry River; Waikari; Treliissick; White-rock River; Pareora; Mt. Harris; Lake Wakatipu.

Oamaru System.—Weka-pass; Otakaika, Waitaki; Castle Rock, Southland.

DENTALIUM CONICUM, Hutton, Cat. Tertiary Moll. of N. Z., p. 1.

Pareora System.—Waikari; Treliissick.

Found also in the Wanganui System.

DENTALIUM MANTELLI, Zittel, Reise der Novara, Geol. ii., p. 45, pl. 13, f. 7; *D. irregulare*, Hutton, Cat. Tertiary Moll. of N. Z., p. 1.

Pareora System.—Port Hills, Nelson; Awatere; Motunau; Mt. Caverhill; Mt. Horrible; Otaio; Pareora; Waihao-forks; Mt. Harris; Hampden; Kanieri.

Oamaru System.—Teschmakers, Oamaru (M'Kay).

DENTALIUM MAJUS, Sowerby, in Darwin's Geol. Obs. in S. America, p. 263, pl. 2, f. 3.

Pareora System.—Westland.

DENTALIUM LEVE, Hutton, Cat. Tertiary Moll. of N. Z., p. 2.

Pareora System.—Motunau; Mt. Harris; Kanieri.

DENTALIUM TENUE, Hutton, Cat. Tertiary Moll. of N. Z., p. 1.

Oamaru System.—Wangape Lake, Waikato; Raglan.

DENTALIUM ECOSTATUM, Kirk, Trans. N. Z. Institute, XIII., p. 306.

Pareora System.—Pareora.

Found also in the Wanganui System.

LAMELLIBRANCHIATA.

TEREDO HEAPHYI, Zittel, Reise der Novara, Geol. ii., p. 45,
pl. 14, f. 4; *Ciadopoda directa*, Hutton, Trans. N.Z. Institute,
IX., p. 597, pl. 16, f. 13.

Pareora System.—Cape Rodney; Waihao-forks.

Oamaru System.—Curiosity Shop; Trelissick.

PANOPŒA NEOZELANICA, Quoy and Gaimard, Voy. Astrolabe, Zool.
iii., p. 547, pl. 83, f. 7-9.

Pareora System.—Napier; Motunau; Kanieri.

Found also in the Wanganui System.

PANOPŒA ORBITA, Hutton, Quar. Jour. Geol. Soc. London, Vol.
41, p. 551; *P. plicata* Hutton, Cat. Tertiary Moll. of N.Z.,
p. 17 [not of Sowerby].

Pareora System.—Greta; Pareora; Mt. Harris; Lake
Wakatipu.

Oamaru System.—Raglan; Cape Farewell; Trelissick.

PANOPŒA WORTHINGTONI, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 17.

Pareora System.—Mt. Harris; Lake Wakatipu.

Oamaru System.—Trelissick.

PANOPŒA sp., Zittel, Reise der Novara, Geol. ii., pl. 9, f. 2.

Oamaru System.—Aotea.

CORBULA CANALICULATA, Hutton; *C. sulcata*, Hutton, Trans. N.Z.
Institute, IX., p. 598, pl. 16, f. 14 [not of Lamarck].

Pareora System.—Mt. Harris; White-rock River

CORBULA HUMEROSA, Hutton, Trans. N.Z. Institute, XVII., p. 330.

Pareora System.—White-rock River.

CORBULA PUMILA, Hutton, Trans. N.Z. Institute, XVII., p. 330.

Pareora System.—White-rock River.

CORBULA (?) DUBIA, Hutton, Cat. Tertiary Moll. of N.Z., p. 18.

Pareora System.—Awatere; Motunau; Mt. Cookson; Greta;
Awamoa; New River, Greymouth.

NEERA KIRKI, Hutton, Cat. Tertiary Moll. of N.Z., p. 18.

Oamaru System.—Wangape Lake, Waikato.

MYODORA SUBROSTRATA, Smith, Pro. Zool. Soc. London, 1880,
p. 584, pl. 53, f. 6.

Pareora System.—Awamoa.

Found also in the Wanganui System.

PHOLADOMYA NEOZELANICA, Hutton, Trans. N.Z. Inst., XVII.,
p. 330.

Oamaru System.—Trelissick.

MACTRA DISCORS, Gray, Mag. Nat. Hist., 1837, p. 371.

Pareora System.—Napier ; Lower Gorge of Waipara ; Trelissick ; Pareora ; White-rock River.

Found also in the Wanganui System.

HEMIMACTRA ELONGATA, Quoy and Gaimard, Voy. Astrolabe,
Zool. iii., p. 518, pl. 83, f. 1-2.

Pareora System.—Napier ; Awatere ; Motunau ; Lower Gorge of Waipara.

LUTRARIA SOLIDA, Hutton, Cat. Tertiary Moll. of N.Z., p. 19.

Pareora System.—Napier ; Lower Gorge of Waipara.

Found also in the Wanganui System.

LUTRARIA SULCATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 19.

Pareora System.—Awatere ; Motunau.

CÆCELLA NEOZELANICA, Deshayes, Pro. Zool. Soc. London, 1854,
p. 335 ; *Darina pusilla*, Hutton, Cat. Marine Moll. of
N.Z., p. 64.

Pareora System.—White-rock River.

Found also in the Wanganui System.

ZENATIA ACINACES, Quoy and Gaimard, Voy. Astrolabe, Zool.
iii., p. 545, pl. 83, f. 5-6.

Pareora System.—Pareora ; Awamoa.

Found also in the Wanganui System.

PAPHIA NEOZELANICA, Chemnitz, Conch. Cab. VI., f. 19-20, (Mya).

Pareora System.—Napier.

Found also in the Wanganui System.

PAPHIA ATTENUATA.—Hutton, Cat. Tertiary Moll. of N.Z., p. 18,
(Mactra).

Oamaru System.—Trelissick.

PAPHIA (?) GRANDIS, Hutton, Cat. Tertiary Moll. of N.Z., p. 20.

Pareora System.—East coast of Wellington.

PSAMMOBIA STANGERI, Gray, in Dieffenbach's New Zealand, ii.,
p. 253.

Pareora System.—Motunau ; Awamoa.

Found also in the Wanganui System.

PSAMMOBIA LINEOLATA, Gray, in Yate's New Zealand, p. 309.

Pareora System.—Motunau ; Pareora ; Point Hill, Waitaki.

Found also in the Wanganui System.

HIATULA INCERTA, Reeve, Conch. Icon. (Soletellina), f. 13.

Pareora System.—Awatere ; Pareora.

Found also in the Wanganui System.

TELLINA ALBA, Quoy and Gaimard, Voy. Astrolabe, Zool. iii.,
pl. 81, f. 1-3.

Pareora System.—Awamoa.

Found also in the Wanganui System.

VENUS OBLONGA, Hanley, in Wood's Index Test. Supp.

Pareora System.—Castle Point, Wellington ; Waikari ;
Awamoa.

Found also in the Wanganui System.

VENUS MERIDIONALIS, Sowb. in Darwin's Geol. Obs. in S. America,
p. 250, pl. 2, f. 13 ; *V. vellicata*, Hutton, Cat. Tertiary Moll.
of N.Z.

Pareora System.—White Cliffs, Taranaki ; Castle Hill, Wel-
lington ; Awatere ; Motunau ; Mt. Caverhill ; Mt.
Cookson ; Lyndon ; Waikari ; White-rock River ;
Awamoa ; Tapanui, Otago.

Found also in the Wanganui System.

VENUS STUTCHBURYI, Gray, in Wood's Index Test. Supp.

Pareora System.—Napier ; Pareora ; Hampden.

Found also in the Wanganui System.

VENUS SULCATA, Hutton, Trans. N.Z. Institute, VII., p. 458,
and fig.

Pareora System.—Napier ; Motunau.

Found also in the Wanganui System.

VENUS MESODESMA, Quoy and Gaimard, Voy. Astrolabe, Zool. iii.,
p. 532, pl. 84, f. 17-18.

Pareora System.—Awamoa.

Found also in the Wanganui System.

CYTHEREA ENYSI, Hutton, Cat. Tertiary Moll. of N.Z., p. 21.

Pareora System.—Lower Gorge of Waipara ; Trelissick.

CYTHEREA (CALLISTA) ACCUMINATA, Hutton, Cat. Tertiary Moll. of
N.Z. (Chione).

Pareora System.—Pareora ; Tapanui, Otago.

CYTHEREA (CALLISTA) ASSIMILIS, Hutton, Cat. Tertiary Moll. of
N.Z., p. 21 (Chione).

Pareora System.—Trelissick ; Pareora ; Otaio.

Found also in the Wanganui System.

CYTHEREA (CALLISTA) ELEGANS, Hutton, Cat. Tertiary Moll. of
N.Z., p. 21.

Pareora System.—Clent Hills Station ; Pareora ; Kanieri.

CYTHEREA (CALLISTA) MULTISTRIATA, Sowb. Thes. Conch., i.,
p. 628, pl. 36, f. 177.

Pareora System.—Motunau ; Greta ; Hampden.

Found also in the Wanganui System.

DOSINEA MAGNA, Hutton, Cat. Tertiary Moll. of N.Z., p. 22.

Pareora System.—Trelissick ; Pareora ; Tengawai.

Oamaru System (?).—Kakahu.

DOSINEA SUBROSEA, Gray, in Dieffenbach's New Zealand, ii., p. 249;
D. dispar Hutton, Cat. Tertiary Moll. of N.Z., p. 22.

Pareora System.—Napier; Castle Point, Wellington; Cape
 Rodney; Kawau; Awatere; Motunau; Lower Gorge
 of Waipara; Trelissick; Pareora; Awamoia.

Found also in the Wanganui System.

DOSINEA GRAYI, Zittel, Reise der Novara, Geol. ii., p. 45, pl. 15,
 f. 11.

Pareora System. — Awatere; Motunau; Greta; Lower
 Gorge of Waipara; Pareora; Mt. Harris.

Found also in the Wanganui System.

DOSINEA LIMBATA, Gould, Pro. Boston Nat. Hist. Soc., iii., p. 277.

Pareora System.—Greta; Pareora.

Found also in the Wanganui System.

TAPES INTERMEDIA, Quoy and Gaimard, Voy. Astrolabe, Zool. iii.,
 p. 526, pl. 84, f. 9-10.

Pareora System.—Awatere; Motunau; Awamoia.

Found also in the Wanganui System.

TAPES CURTA, Hutton, Cat. Tertiary Moll. of N.Z., p. 22.

Pareora System.—Upper Mohaka, Hawke's Bay; Waikari;
 Trelissick; Pareora.

CARDIUM SPATIOSUM, Hutton, Cat. Tertiary Moll. of N.Z., p. 23.

Pareora System.—Cape Rodney; East coast of Wellington;
 Waitotara; Trelissick.

CARDIUM MULTIRADIATUM, Sowb. in Darwin's Geol. Obs. in S.
 America, p. 251, pl. 2, f. 16.

Pareora System.—Lower Gorge of Waipara.

CARDIUM GREYI, Hutton, Cat. Tertiary Moll. of N.Z., p. 23.

Pareora System.—Kawau.

CARDIUM PATULUM, Hutton, Cat. Tertiary Moll. of N.Z., p. 23.

Pareora System.—Waihao-forks.

Oamaru System.—The Deans, Waipara; Trelissick.

CARDIUM STRIATULUM, Sowerby, Pro. Zool. Soc. London, 1840.

Pareora System.—White Cliffs, Taranaki.

Found also in the Wanganui System.

CARDIUM (PROTocardium) SERUM, Hutton, Cat. Tertiary Moll. of
N.Z., p. 23.

Oamaru System.—Trelissick.

CHAMA HUTTONI, Hector, MSS.

Pareora System.—Castle Point, Wellington.

CHAMOSTRÆA ALBIDA, Lamarck, Anim. sans Vert., 2nd ed., VI.,
p. 585.

Pareora System.—Trelissick.

Found also in the Wanganui System.

LUCINA DENTATA, Wood, Gen. Conch., p. 195, pl. 46, f. 7.

Pareora System.—Waikari; Pareora; Awamoā.

Oamaru System.—Trelissick.

Found also in the Wanganui System.

LORIPES LAMINATA, Hutton, Trans. N. Z. Institute, XVII., p. 331.

Pareora System.—White-rock River.

LORIPES CONCINNA, Hutton, Trans. N. Z. Institute, XVII., p. 323.

Pareora System.—White-rock River.

Found also in the Wanganui System.

MYSIA NEOZELANICA, Gray, in Diffenbach's New Zealand, ii., p. 256.

Pareora System.—Awamoā.

Found also in the Wanganui System.

CRASSATELLA AMPLA, Zittel, Reise der Novara, Geol. ii., p. 46,
pl. 14, f. 3.

Pareora System—Cape Rodney; Kawau; Trelissick.

CRASSATELLA OBESA, Adams, Pro. Zool. Soc. of London, 1852,
p. 90, pl. 16, f. 2; *C. Trailli*, Hutton, Cat. Tertiary Moll.
of N. Z.

Pareora System.—Mt. Horrible; Pareora; Mt. Harris;
Awamoā.

A living species not yet found in the Wanganui System.

CRASSATELLA AUSTRALIS, Hutton, Cat. Tertiary Moll. of N. Z., p. 25 (Astarte). Perhaps the same as *C. Lyallii* Sowb. in Darwin's Geol. Obs. in S. America.

Oamaru System (?)—Kakahu.

CRASSATELLA ATTENUATA, Hutton, Cat. Tertiary Moll. of N. Z., p. 24, (Mactra).

Pareora System.—Point Hill, Waitaki.

Oamaru System.—Trelissick.

CARDITA AUSTRALIS, Lamarck, Anim. sans Vert., 2nd ed., VI. p. 383.

Pareora System.—Napier; Castle Point, Wellington; Mt. Caverhill; Mt. Harris.

Found also in the Wanganui System.

CARDITA DIFFICILIS, Deshayes, Pro. Zool. Soc. London, 1852, p. 103, pl. 17, f. 16-17; *Venericardia intermedia*, Hutton, Cat. Tertiary Moll. of N. Z.

Pareora System.—Castle Point, Wellington; Motunau; Lower Gorge of Waipara; Waikari; Hurinui Mound; Awamoia.

Found also in the Wanganui System.

CARDITA PATAGONICA, Sowb. in Darwin's Geol. Obs. in S. America, p. 251, pl. 2, f. 17; *Venericardia intermedia* var β Hutton, Cat. Tertiary Moll. of N.Z.

Pareora System.—Matakuhi, Bay of Islands; Trelissick; Orari; Mt. Harris; Awamoia.

Oamaru System.—Trelissick; Kakahu.

Found also in the Wanganui System.

UNIO INFLATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 25.

Oamaru System.—Moreley Creek, Southland.

TRIGONIA SEMIUNDULATA, McCoy, Prod. Palæ. Victoria, Decade i pl. 19, f. 4-5.

Pareora System.—Awamoia.

LEDA FASTIDIOSA, Adams, Pro. Zool. Soc. London, 1856, p. 49 ;

L. semiteres, Hutton, Trans. N.Z. Institute, IX., p. 598.

Pareora System.—Waihao-forks.

Found also in the Wanganui System.

LEDA sp. ind. Zittel, Reise der Novara, Geol. ii., p. 47, pl. 15, f. 2.

Pareora System. Awatere.

SOLENELLA AUSTRALIS, Quoy and Gaimard, Voy. Astrolabe, Zool.

iii., p. 471, pl. 78, f. 5-10 ; *Nucula ornata* Sowb. in Darwin's Geol. Obs. in S. America, p. 251, pl. 2, f. 19.

Pareora System.—Conway River.

Found also in the Wanganui System.

SOLENELLA FUNICULATA, Hutton ; *S. australis*, Zittel, Reise der Novara, Geol. ii., p. 47, pl. 13, f. 2 [not of Quoy and Gaimard].

Pareora System.—White Cliffs, Taranaki ; Port Hills, Nelson ; Conway River ; Waikari ; Mt. Harris ; Hampden.

The lamellæ are closer than in the last species.

ARCA DECUSSATA, Sowb., Pro. Zool. Soc. London, 1833, p. 8.

Pareora System.—Trelissick.

Oamaru System.—Trelissick.

Found also in the Wanganui System.

MACRODON AUSTRALIS, Hutton, Trans. N.Z. Institute, XVII., p. 331.

Pareora System.—White-rock River ; Mt. Horrible ; Pareora.

CUCULLÆA PONDEROSA, Hutton, Cat. Tertiary Moll. of N.Z., p. 27.

Pareora System.—Korakonui, East coast of Wellington ; Waikari ; Trelissick ; Lake Wakatipu.

Oamaru System.—Wangarei ; Kakahu.

CUCULLÆA WORTHINGTONI, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 27.

Pareora System.—Waikari ; Trelissick ; Lake Wakatipu.

Oamaru System.—Otakaika, Waitaki ; Kakahu.

CUCULLÆA ALTA, Sowb. in Darwin's Geol. Obs. in S. America,
p. 252, pl. 2, f. 22-23.

Pareora System.—East Coast, Wellington ; Lyndon ; Waikari ; Trelissick ; Lake Wakatipu ; Callaghan's Creek, Westland.

Oamaru System.—Raglan ; Curiosity Shop ; Kakahu ; Otakaika, Waitaki ; Kakanui ; Kyeburn ; Green Island ; Tokomairiro.

CUCULLÆA ATTENUATA, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 28.

Pareora System.—Paparoa, Upper Wanganui : Lake Wakatipu.

Oamaru System.—Caversham.

CUCULLÆA SINGULARIS, Zittel, Reise der Novara, Geol. ii., p. 49,
pl. 9, f. 10.

Oamaru System.—Aotea.

PECTUNCULUS LATICOSTATUS, Quoy and Gaimard, Voy. Astrolabe,
Zool. iii., p. 466, pl. 77, f. 1-2.

Pareora System, Kawau ; Napier ; Castle Point, Wellington ; Port Hills, Nelson ; Awatere ; Mt. Caverhill ; Lyndon ; Waikari ; Motunau ; Lower Gorge of Waipara ; Trelissick ; Callaghan's Creek, Westland ; Hampden ; Wangaloa, Otago.

Oamaru System.—Caversham.

Found also in the Wanganui System.

PECTUNCULUS GLOBOSUS, Hutton, Cat. Tertiary Moll. of N.Z., p. 28.

Pareora System.—Kawau ; Hicks Bay ; Wairoa, Nelson ; Waikari ; Motunau ; Trelissick ; Pareora ; White-rock River ; Callaghan's Creek, Westland ; Kanieri ; Oamaru ; Wangaloa, Otago.

Oamaru System (?)—Kakahu.

PECTUNCULUS (?) CORDATUS, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 28.

Pareora System.—Wairoa, Nelson; Greta; Trelissick;
White-rock River.

LIMOPSIS AURITA, Brocchi, Conch. Foss. Subapen., pl. 11, f. 9;
L. zealandica, Hutton, Cat. Tertiary Moll. of N.Z., p. 28.

Pareora System.—Pareora; Otaio; White-rock River; Mt.
Harris; Awamoia.

Oamaru System.—Trelissick; Kakahu; Otakaika, Waitaki.

LIMOPSIS INSOLITA, Sowb. in Darwin's Geol. Obs. in S. America,
p. 252, pl. 2, f. 20-21.

Pareora System.—Port Hills, Nelson; Kanieri; Waikari;
Pareora; White-rock River; Mt. Harris; Hampden.

MYTILUS LATUS, Chemnitz (?), Conch. Cab., VIII., f. 747.

Pareora System.—Trelissick.

MYTILUS MAGELLANICUS, Lamarck, Anim. sans Vert., 2nd ed.,
VII., p. 37.

Pareora System.—Napier; Hampden.

Found also in the Wanganui System.

MYTILUS STRIATUS, Hutton, Trans. N.Z. Institute, XVII., p. 332.

Oamaru System.—Trelissick.

MODIOLA AUSTRALIS, Gray, in King's Voyage, ii., p. 477.

Pareora System.—Napier; Mt. Caverhill; Waikari; Motunau;
Lower Gorge of Waipara; Trelissick; Opihi.

Found also in the Wanganui System.

CRENELLA ELONGATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 25.

Oamaru System.—Trelissick.

PERNA sp. ind. Hutton, Cat. Tertiary Moll. of N.Z., p. 26.

Pareora System.—Castle Point, Wellington.

Found also in the Wanganui System.

PINNA NEOZELANICA, Gray, in Dieffenbach's New Zealand, ii.,
p. 259.

Pareora System.—Awatere.

Oamaru System (?).—Kakahu.

Found also in the Wanganui System.

PINNA DISTANS, Hutton, Cat. Tertiary Moll. of N.Z., p. 26.

Oamaru System.—Curiosity Shop ; Caversham, Dunedin.

LIMA LÆVIGATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 33.

Oamaru System.—Mt. Somers building stone ; Opuha ;
Waiholo Gorge, Otago.

LIMA CRASSA, Hutton, Cat. Tertiary Moll. of N.Z., p. 33.

Pareora System.—Lower Gorge of Waipara ; Trelissick ;
Pareora.

LIMA PAUCISULCATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 33.

Oamaru System.—Cape Farewell ; Kaipuke Cliffs ; Caver-
sham (?)

LIMA COLORATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 33.

Pareora System.—Mt. Horrible ; Pareora ; Awamoa.

LIMA PALÆATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 33.

Oamaru System.—Culverden ; Curiosity Shop ; Cave Creek,
Mt. Somers ; Coal Creek, Rangitata ; Oamaru.

LIMA MULTIRADIATA, Hutton, Cat. Tertiary Moll. of N.Z., p. 33.

Oamaru System.—Curiosity Shop.

LIMA WOODSII, Tate, Trans. Phil. Soc. Adelaide.

Oamaru System.—Poverty Bay ; Trelissick.

HINNITES TRAILLI, Hutton, Cat. Tertiary Moll. of N. Z., p. 32.

Pareora System.—Trelissick ; Awamoa.

PECTEN ATHLETA, Zittel, Reise der Novara, Geol. ii., p. 49,
pl. 10, f. 1.

Oamaru System.—Whangape Lake ; Tata Island ; Motupipi ;
Trelissick.

PECTEN TRIPHOOKEI, Zittel, Reise der Novara, Geol. ii., p. 52,
pl. 11, f. 4.

Pareora System.—Napier; Maunga-pakeha Taipo and Castle Point, Wellington; Waitotara; Lyndon; Waikari; Motunau.

PECTEN HUTCHINSONI, Hutton, Cat. Tertiary Moll. of N. Z., p. 31.

Pareora System.—Oamaru; Hampden.

Oamaru System.—Tata Island; Kaipuke; Takaka; Weka Pass; Trelissick; Kakanui.

PECTEN BEETHAMI, Hutton, Cat. Tertiary Moll. of N. Z., p. 31.

Pareora System.—Upoko-ngararu, Wellington.

Oamaru System.—White-rock Quarry, Ashley; Mt. Somers stone; Oamaru; Caversham.

PECTEN SECTUS, Hutton, Cat. Tertiary Moll. of N. Z., p. 30.

Pareora System.—Napier; Motunau; Kanieri; Callaghan's Creek, Westland.

PECTEN CRAWFORDI, Hutton, Cat. Tertiary Moll. of N. Z., p. 32.

Pareora System.—Maunga-pakeha Taipo, Wellington; Motanau (?).

Oamaru System.—Kakanui.

PECTEN SEMPLICATUS, Hutton, Cat. Tertiary Moll. of N. Z., p. 30.

Pareora System.—Castle Point, Wellington.

. Found also in the Wanganui System.

PECTEN DIFFLUXUS, Hutton, Cat. Tertiary Moll. of N. Z., p. 31.

P. delicatulus (l.c., p. 30), is the left valve of this species.

Pareora System.—Castle Point, Wellington; Weka Pass; Greta; Motunau.

PECTEN VENOSUS, Hutton, Cat. Tertiary Moll. of N. Z., p. 30.

Oamaru System (?)—Oamaru.

PECTEN NEOZELANICUS, Gray, in Dieffenbach's N. Z., ii., p. 260.

Pareora System.—Napier; Greta.

Found also in the Wanganui System.

PECTEN WILLIAMSONI, Zittel, Reise der Novara, Geol. ii., p. 50,
pl. 9, f. 11.

Oamaru System.—Raglan ; Aotea ; Kaipuki ; Tata Island ;
Blackbirch Creek, Nelson ; Oxford Chalk ; Curiosity
Shop.

PECTEN SCANDULA, Hutton, Cat. Tertiary Moll. of N. Z., p. 29.

Pareora System.—Kaniéri.

PECTEN FISCHERI, Zittel, Reise der Novara, Geol. ii., p. 53, pl. 9,
f. 1-2.

Pareora System.—Orakei Bay, Auckland (?).

Oamaru System.—Papakura ; Port Waikato ; Weka Pass ;
Oamaru.

PECTEN YAHLSENSIS, Tenison-Woods, Trans. Phil. Soc. Adelaide,
1865, pl. 1, f. 4 ; *S. Hectori* Hutton, Cat. Tertiary Moll. of
N.Z., p. 30 ; *P. Hochstetteri* Zittel, l.c. pl. 11., f. 5 b.

Oamaru System.—Brighton, Westland ; Trelissick ; Kakanui.

PECTEN HOCHSTETTERI, Zittel, Reise der Novara, Geol. ii., p. 50,
pl. 11., f. 5a.

Pareora System.—Mt. Cookson ; Waikari ; Motunau ;
Waihao ; Hampden.

Oamaru System.—Wangarei ; Raglan ; Aotea ; Cape Fare-
well ; Kaipuke ; Pt. Elizabeth, Greymouth ; Blackbirch
Creek, Nelson ; Weka Pass ; Trelissick ; Curiosity
Shop ; Kakahu ; Oamaru ; Caversham ; Waimea plains,
Southland ; Winton.

PECTEN AUCKLANDICUS, Zittel, Reise der Novara, Geol. ii., p. 53,
pl. 9, f. 1a.

Pareora System.—Orakei Bay, Auckland.

PECTEN CHATHAMENSIS, Hutton, Cat. Tertiary Moll. of N.Z. p. 29.

Pareora System.—Napier ; Castle Point, Wellington.

Oamaru System.—Trelissick ; Coal Creek, Rangitata.

PECTEN BURNETTI, Zittel, Reise der Novara, Geol. ii., p. 51, pl. 10,
f. 2.

Pareora System.—Kawau ; Napier ; Castle Point, Wellington.

Oamaru System.—Raglan ; Motupipi ; Tata Island ; Takaka ;
Oamaru ; Waimea plains ; Winton.

PECTEN POLYMORPHOIDES, Zittel, Reise der Novara, Geol. ii., p. 51,
pl. 11., f. 3.

Pareora System.—Cape Rodney.

Oamaru System.—Port Waikato ; Weka Pass ; Trelissick ;
Kakanui ; Winton.

PECTEN CONVEXUS, Quoy and Gaimard, Voy. Astrolabe, Zool. iii.,
p. 443, pl. 76, f. 1-3.

Pareora System.—Castle Point, Wellington.

Found also in the Wanganui System.

PECTEN ZITTELLI, Hutton, Cat. Tertiary Moll. of N.Z., p. 32 ;
Pecten sp ind. Zittel, Reise der Novara, Geol. ii., pl. 9, f. 3.

Pareora System.—Orakei Bay, Auckland (?).

Oamaru System.—Papakura ; Wangape Lake, Waikato ;
West coast, Auckland ; Poverty Bay ; Cape Kidnappers ;
Waihao ; Caversham ; Haycocks, Mt. Hamilton South-
land.

ANOMIA ALECTUS, Gray, Pro. Zool. Soc. of London, 1849, p. 117.

Pareora System.—White-rock River.

Found also in the Wanganui System.

ANOMIA UNDATA, Hutton, Trans. N.Z. Institute, XVII., p. 324.

Pareora System.—Hurinui Mound ; Trelissick.

Oamaru System.—Cave Creek, Mt. Somers.

Found also in the Wanganui System.

ANOMIA TRIGONOPSIS, Hutton, Trans. N.Z. Institute, IX., p. 598.

Pareora System.—White-rock River.

PLACUNANOMIA NEOZELANICA, Gray, in Dieffenbach's New
Zealand, ii., p. 260.

Pareora System.—Glenwark.

Found also in the Wanganui System.

PLACUNANOMIA INCISURA, Hutton, Cat. Tertiary Moll. of N.Z.,
p. 34.

Pareora System.—Pareora.

OSTREA WULLERSTORFII, Zittel, Reise der Novara, Geol. ii, p. 54,
pl. 11, f. 6.

Pareora System.—Cape Rodney ; Kawau.

Oamaru System.—West coast, Auckland ; Kaipuki ; Kakahu ;
Oamaru ; Waiholo Gorge.

OSTREA INGENS, Zittel, Reise der Novara, Geol. ii., p. 54.
pl. 13, f. 3.

Pareora System.—Te Aute, Napier ; Castle Point, Wellington ; Waitotara ; Parakino.

OSTREA NELSONIANA, Zittel, Reise der Novara, Geol. ii., p. 55,
pl. 11, f. 7.

Pareora System.—Napier ; Manawatu Gorge ; Awatere ;
Motunau ; Waikari ; Orari.

Oamaru System.—Cape Farewell ; Tata Island.

OSTREA EDULIS, Linné, Reeve Conch. Icon. f. 8.

Pareora System.—Motunau ; Lower Gorge of Waipara ;
Hampden.

Oamaru System (?)—Kakahu.

Found also in the Wanganui System.

OSTREA INCURVA, Hutton, Cat. Tertiary Moll. of N.Z., p. 35.

Pareora System.—Waihi River, S. Canterbury.

Oamaru System.—Brighton, Westland ; Oamaru (?)